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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/469,597 | 12/22/1999 | JAMES E. ANGELO | S01.12-0543 | 5141 |

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06/04/2003

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EXAMINER

KAPADIA, VARSHA A

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2651

DATE MAILED: 06/04/2003

15

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/469,597

Applicant(s)

ANGELO ET AL.

Examiner

Varsha A Kapadia

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-18 and 20 is/are allowed.
- 6) ☐ Claim(s) 1-6, 8-9, 19 and 21-25 is/are rejected.
- 7) ☒ Claim(s) 7, 10, 11 and 26 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☒ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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This office action is responsive to the amendment filed on March 19, 2003.

Objection Under 37 C.F.R. 1.75 a

Claims 1-11 are objected to because of the following informalities: the newly amended language "actuatable transducer" is not consistent with the specification. The specification refers to this transducer as strain transducer. Appropriate correction is required.

Rejection Under 35 U.S.C. 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless —

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-2, 8, 23 and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Evans et al.(5,862,015)

With regards to claims 1 and 2 Evans et al discloses a disc drive comprising:
A disc rotationally coupled to a chassis (see col.3 lines 34-54); a movable head suspension assembly...(see abstract, fig.1 and disclosure thereof); a actuatable transducer supported on the movable head suspension assembly... (see col.2 lines 17-50, figs. 1,3 and 8 element 10 and

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disclosure thereof.) a vibration detector (wheatstone bridge...(see col.4 lines 55-col.5 line 26 and col.7 lines 41-52, Evans et al further specifies that the vibration signal is indicative of the head – disc contact as recited in claim2 see col.1 lines 37-54)).

With regards to claim 23, Evans et al discloses an assembly comprising: a movable suspension assembly, an actuator coupled to the movable suspension assembly and a detector as claimed (see abstract, figs.1,3 and disclosure thereof, col.2 lines 17-50, col.4 lines 55-col.5 line 26 and col.7 lines 41-52).

With regards to claims 8 and 25, Evans et al discloses a microactuator controller coupled to the transducer as claimed (see col.4 lines 50-54).

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 19, 21 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Kasiraj et al.

With regards to claim 19 and 21, Kasiraj et al. discloses drive assembly comprising: a head suspension assembly and a detector that provides a signal indicative of vibration associated with the head suspension assembly (a component of the disc drive)... (see abstract, fig.1 elements 8-22 and 55 and disclosure thereof, and paragraph bridging cols.2-3).

With regards to claim 22, Kasiraj et al discloses a frequency filter as claimed (see fig.3).

Rejection Under 35 U.S.C. 103

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Evans et al in view of Kasiraj et al (5,777,815).

With regards to claims 3-4, Evans et al discloses the invention as described above in this office action. Evans et al further discloses the capability to detect at least one of a bending mode or torsion mode frequency (see col.4 lines 30-49 and col.6 lines 28-30). Evans et al fails to specify that the detector includes a frequency filter as claimed.

Kasiraj et al., however discloses filter as claimed (see fig.1 element 55, fig.3 elements 50-51 and disclosure thereof).

It would have been obvious to one of ordinary skilled in the art at the time the invention was made to modify Evans et al with the above teachings from Kasiraj et al. in order to provide a detector including a frequency filter to differentiate the undesired frequency from the normal operating frequency and hence to minimize the crosstalk and improve the S/N ratio, as taught by Kasiraj et al (see col.7 lines 18+).

Claims 5-6 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Evans et al in view of Novotny (6,362,542).

With regards to claims 5-6 and 24, Evans et al discloses the invention as described above in this office action. Evans et al fails to specify that the transducer is a piezoelectric material or is an electrostatic transducer.

Novotny, however discloses that the transducer that is responsive to the head movement is a piezoelectric material or electrostatic (see col.1 lines 35-37).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Evans et al with the above teachings from Novotny to provide a transducer that is piezoelectric or electrostatic since both are well known and widely used as an alternate material and hence to provide user with an alternate since no unexpected results are to occur.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Evans et al in view of Perry (3,688,287).

With regards to claim 9, Evans et al discloses the invention as described above in this office action. Evans et al fails to specify that the disc drive includes plurality of discs and plurality of head assemblies as claimed.

Perry however, discloses a disc drive including a plurality of discs and plurality of heads as claimed (see abstract and fig.1). Furthermore, to provide an actuatable transducer as taught by Evans et al on each head suspension assembly disclosed by Perry is considered merely as duplication of arrangement to provide efficiency and no unexpected results are to occur.

Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Evans et al with the above teachings from Perry in order to provide a disc drive having a plurality of disc and plurality of heads in order to satisfy the need for efficient disc drive and hence save time for the user.

Allowable Subject matter

Claims 12-18 and 20 are allowed.

Claims 12-18 and 20 differs from the prior art of record by reciting in a method of operating a disk drive a step of detecting an amplitude of the transducer signal output by the transducer supported on a movable head suspension assembly above a threshold amplitude and outputting a level detected signal indicative of the head vibration.

Claims 7, 10-11 and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 10-11 and 26, differs from the prior art of record by specifically reciting that the transducer as defined is configured to operate between a detection mode and an actuation mode as defined in the claimed language.

Claim 7 differs from the prior art of record by reciting that the disc drive further comprises a process controller coupled to the detector and configured to receive the outputted level detected signal and output a process command to re-execute a write command in drive memory

Response to Remarks

Applicant's arguments with respect to claims 1-26 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Varsha A Kapadia whose telephone number is (703) 305-4198. The examiner can normally be reached on Mon-Wed from 6:30 AM to 2:00 PM.

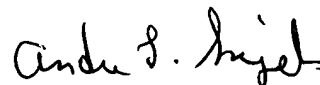
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Hudspeth can be reached on (703) 308-4825. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 746-4959 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.



VK
June 2, 2003



ANDREW L. SNIEZEK
PRIMARY EXAMINER